

Panel Scientific and Technical Review
(Note: Review comments will be anonymous, but public.)

Proposal number: 2001-F214

Short Proposal Title: Wetland Hg

1a) Are the objectives and hypotheses clearly stated?

Summary of Reviewers comments:

Both reviewers felt they were well stated

Panel Summary:

Hypotheses are clearly stated but simplistic, widely accepted, and of questionable utility (e.g., spatial and temporal trends exist in methylmercury production; Hg concentrations in sediment have varied over time). The case is not clearly made as to how success in meeting project objectives would be of substantial value to restoration efforts.

1b1) Does the conceptual model clearly explain the underlying basis for the proposed work?

Summary of Reviewers comments:

Both reviewers thought the summary of existing literature provides support for the project's conceptual framework.

Panel Summary:

Conceptual model is a textbook-like summary of the aquatic fate of Hg. Its excessive length (3 pages) prevents the investigators from fully developing their research approach given proposal page limitations. Hg-related information specific to San Francisco Bay should have been emphasized.

1b2) Is the approach well designed and appropriate for meeting the objectives of the project?

Summary of Reviewers comments:

One reviewer characterized the approach as well designed, whereas the other questioned if sample density was adequate and if the sediment depth strata sampled was appropriate.

Panel Summary:

The panel noted numerous deficiencies. Some panel members shared the concern was expressed about spatial coverage. Core dating techniques may not be adequate for studying recent patterns of Hg deposition, and cesium may have been a better choice than C-14. Sediment depth strata sampled should be linked to local redox conditions. Bioaccumulation needs to be defined (what biological tissue will be analyzed?) Total Hg in tissue could be measured more simply than the proposed analysis of methylHg, since Hg in tissue is typically the organic form. Despite claims to be studying Hg transformation, no transformation rates are actually determined.

1c1) Has the applicant justified the selection of research, pilot or demonstration project, or a full-scale implementation project?

Summary of Reviewers comments:

The investigators portray the work as research, and both reviewers concur.

Panel Summary:

The panel agrees the proposal is essentially a research effort.

1c2) Is the project likely to generate information that can be used to inform future decision making?

Summary of Reviewers comments:

Both reviewers believed the work would assist decision-making.

Panel Summary:

The investigators have not adequately clarified how the work would assist marsh restoration efforts. Hg distribution in a marsh as a function of channel morphology does not have clear application to restoration actions.

2a) Are the monitoring and information assessment plans adequate to assess the outcome of the project?

Summary of Reviewers comments:

Both reviewers found monitoring and assessment plans adequate.

Panel Summary:

As a research project no monitoring plan is explicitly required by CALFED.

2b) Are data collection, data management, data analysis, and reporting plans well-described, scientifically sound and adequate to meet the proposed objectives?

Summary of Reviewers comments:

One reviewer noted the lack of information on data analysis and quality assurance.

Panel Summary:

The panel noted lack of attention to existing Delta data on Hg. No biogeochemistry relating to Hg cycling is proposed, but this might be expected for a project such as this. Justification for the collection of mobile fish, like striped bass, is unclear as correlation with local sediment Hg levels is likely to be weak. Finally, the proposed use of C and N isotopes to assess trophic position is inadequate in scope to be of substantial value.

3) Is the proposed work likely to be technically feasible?

Summary of Reviewers comments:

All proposed procedures are feasible.

Panel Summary:

Feasible, but of unclear value to CALFED needs.

4) Is the proposed project team qualified to efficiently and effectively implement the proposed project?

Summary of Reviewers comments:

Investigator qualifications were acceptable to the reviewers but efficiency was questioned by one reviewer given the cost of the work for the amount of sampling proposed.

Panel Summary:

The research team could benefit from a member with specific expertise with Hg. None of the 3 co-investigators and only 1 of the 3 collaborators has prior experience in Hg biogeochemistry or toxicology. The panel also noted that the proposed Hg analyses require specialized skills, but the proposal lacks any indication of where the analyses will be done.

5) Other comments

Both reviews believed the work could make a substantial contribution to the field and rated it “very good”.

Overall Evaluation PANEL SUMMARY COMMENTS

The panel rating of this proposal is strikingly different than those of the two external reviewers. The panel felt that the reviews received for this proposal were exceptionally superficial and uncritical, and that a rating of fair is merited given the methodological problems noted above, the lack of apparent linkage to CALFED restoration efforts, and the lack of prior relevant experience of the investigators. In addition, the proposed schedule exceeds the 3-year time limit for funding given in the PSP. The panel also noted that the proposal makes no explicit reference to or indications of collaboration with the CALFED Directed Action on Hg (99-B06) or on-going work on Hg in restored marshes (97-C05). Overall, the high cost of the proposal (>\$1 million) is not justified by its apparent value.

Summary Rating

Excellent
Very Good
Good
Fair
Poor

Your Rating: FAIR